

**EFFECTIVENESS OF MULTISENSORY LEARNING  
APPROACH ON ACADEMIC PERFORMANCE  
OF SLOW LEARNERS AMONG SCHOOL  
AGE CHILDREN IN A SELECTED  
SCHOOL AT  
KULASEKHARAM**



**A DISSERTATION SUBMITTED TO THE TAMILNADU  
DR. M.G.R. MEDICAL UNIVERSITY, CHENNAI,  
IN PARTIAL FULFILMENT FOR THE  
DEGREE OF MASTER OF  
SCIENCE IN NURSING  
APRIL 2015**

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**INTERNAL EXAMINER**

.....

**EXTERNAL EXAMINER**

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Approved by the dissertation committee on

11.01.2014

**PRINCIPAL**

**Prof. Mrs. Santhi Letha M.Sc(N), MA,  $\overline{\text{PhD}}$ (N),**  
Principal,  
SreeMookambika College of Nursing, Kulasekharam.

.....

**RESEARCH GUIDE**

**Mrs. Suja Renjini M.Sc(N),**  
Assistant Professor,  
Department of Child Health Nursing,  
SreeMookambika College of Nursing, Kulasekharam.

.....

**HOD OF CHILD HEALTH NURSING**

**Mrs. Dali Christabel M.Sc(N),**  
HOD of Child Health Nursing,  
SreeMookambika College of Nursing, Kulasekharam.

.....

**MEDICAL EXPERT**

**Dr. Sulekha, MD, DCH,**  
HOD, Department of Pediatrics,  
SreeMookambika Institute of Medical Sciences, Kulasekharam.....

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## **BONAFIDE CERTIFICATE**

This is to certify that the dissertation entitled **“A study to evaluate the effectiveness of multisensory learning approach on academic performance of slow learners among school age children in a selected school at Kulasekharam.”** is the bonafide work done by **Miss. JebaShylika.J**, II year M.Sc. Nursing, Sree Mookambika College of Nursing, Kulasekharam, under the guidance of **Mrs. SujaRenjini, MSc(N)**, Assistant Professor in Child Health Nursing, in partial fulfilment of the requirement for the degree of Master of Science in Nursing under The Tamilnadu Dr. M.G.R. Medical University, Chennai.

Place:Kulasekharam

**Principal**

Date: 09.02.2015

SreeMookambika College of Nursing.

## DECLARATION

I hereby declare that the present dissertation titled **“A study to evaluate the effectiveness of multisensory learning approach on academic performance of slow learners among school age children in a selected school at Kulasekharam.”** is the outcome of the original research work under taken by me under the guidance of **Mrs.SujaRenjini,MSc(N)**, Assistant Professor in Child Health Nursing, SreeMookambika College of Nursing, Kulasekharam. I also declare that the material of this has not formed anyway the basis for the awarded of any degree or diploma in this university or any universities.

Place: Kulasekharam

**Miss.JebaShylika**

Date: 09.02.2015

II year M.Sc. Nursing

SreeMookambika College of Nursing.

## LIST OF CONTENTS

<b><u>Chapter No</u></b>	<b><u>Contents</u></b>	<b><u>Page No</u></b>
	Acknowledgement	i
	List of Tables	ii
	List of Figures	iii
	List of Appendices	iv
	Abstract	v
<b>I</b>	<b>Introduction</b>	
	Background of the Study	1
	Need and Significance of the study	4
	Statement of the Problem	7
	Objectives of the study	7
	Hypothesis	8
	Operational Definition	8
	Assumptions	9
	Delimitations of the Study	10
	Ethical Consideration	10
	Conceptual Framework	10

<b><u>Chapter No</u></b>	<b><u>Contents</u></b>	<b><u>Page No</u></b>
<b>II</b>	Review of Literature	13
	Studies Related to Slow Learners	15
	Studies related to Academic performance	17
	Studies Related to Multisensory learning approach	

**List of Contents Contd...**

<b><u>Chapter No</u></b>	<b><u>Contents</u></b>	<b><u>Page No</u></b>
<b>III</b>	<b>Methodology</b>	
	Research Approach	21
	Research Design	21
	Setting of the Study	22
	Variables	22
	Population	22
	Sample size	22
	Sampling Technique	22
	Sample Selection Criteria	23
	Inclusion Criteria	23
	Exclusion Criteria	23
	Data Collection Tool	23
	Description of the Tool	24
		25
		25

<b><u>Chapter No</u></b>	<b><u>Contents</u></b>	<b><u>Page No</u></b>
	Validity	25
	Reliability	
	Pilot Study	
	Data Collection Procedure	25
	Plan for Data Analysis	26
<b>List of Contents Contd...</b>	<b>and Interpretation</b>	28
<b>V</b>	<b>Results and Discussion</b>	51
<b>VI</b>	<b>Summary, Conclusion, Implications, Limitations and Recommendations</b>	
	Summary	55
	Conclusion	56
	Nursing Implications	57
	Limitations	58
	Recommendations	58
	<b>Bibliography</b>	60
	<b>Appendices</b>	I



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**INVESTIGATOR**

## LIST OF TABLES

<b><u>Table No</u></b>	<b><u>Titles</u></b>	<b><u>Page No</u></b>
1	Frequency and Percentage Distribution of Selected Subjects With Regards to the Demographic Variables	30
2	Frequency and percentage distribution of samples according to the pretest and post test level of academic performance	44
3	Effectiveness of Multisensory learning approach to improve academic performance of slow learners	47
4	Association between the level of academic performance and selected demographic variables	48

## **LIST OF FIGURES**

<b><u>Figure No</u></b>	<b><u>Titles</u></b>	<b><u>Page No</u></b>
1	Conceptual Framework	12
2	Schematic Representation of Research Design	27
3	Bar Diagram Representing Distribution of Samples According to Age	34
4	Bar Diagram Representing Distribution of Samples According to Sex	35
5	Bar Diagram Representing Distribution of Samples According to Birth Order	36
6	Bar Diagram Representing Distribution of Samples based on standard of studying.	37
7	Pie Diagram Representing Distribution of Samples According to Educational Status of the Parents.	38
8	Bar Diagram Representing Distribution of Samples According to occupation of parents.	39
9	Bar Diagram Representing Distribution of Samples According to type of family.	40
10	Bar Diagram Representing Distribution of Samples According to living area of child.	41
11	Bar Diagram representing Distribution of Samples According to special tuition.	42
12	Bar diagram representing distribution of samples according to mode of study in home	43
13	Bar Diagram representing Pretest Level of Academic Performance	45
14	Bar Diagram representing Posttest Level of Academic Performance	46

## LIST OF APPENDICES

<b><u>Serial No</u></b>	<b><u>Titles</u></b>	<b><u>Page No</u></b>
A	Letter Seeking Permission for Conducting Study	I
B	Letter Seeking Expert Opinion for Content and Tool Validity	II
C	Certificate showing conduction of study	III
D	List of Experts for Tool Validations	IV
E	Data Collection tool- English Section A- Demographic variable Section B-Modified Zimmerman's Academic Achievement Scale	V
F	Evaluation Tool Checklist	XIII
G	Ethical Clearance Certificate	XV

## **ABSTRACT**

### **Introduction**

Learning is considered to be a skill, both within and beyond the walls of the classroom. It depends upon the environmental stimulation, opportunities and guidance one is able to receive. Children with low learning skills are at a disadvantaged position when compared to children who can cope with the normal learning system. To ensure slow learners success in schools, their rate of slow learning to be accommodated through specifically designed interventions such as multisensory learning in accordance with their ability level.

### **Objective**

The overall objective of the study was to assess the academic performance of slow learners, and to find out the effectiveness of multisensory approach on academic improvement of slow learners among school age children.

### **Methodology**

This study based on pre experimental one group pretest posttest design. Pilot study was conducted on 6 samples. After conducting the pilot study, A total of 60 samples were selected for the main study by purposive sampling technique. The investigator conducted a main study in a sample of 60 school age children with low learning ability. Verbal consent was obtained from the sample and confidentiality was maintained.

Modified Zimmerman's academic achievement rating scale was used to assess the academic performance of slow learners among school age children. It has 20 items related to academic and other areas of child's performance. Data were analyzed by descriptive and inferential statistics.

### **Findings of the Study**

The findings of the study revealed that the pretest mean score as 30.4 and the post test mean score as 60.1. A comparison was done between the pre and post test

level of academic performance by paired t' test. The t test value was 37.8 at  $p < 0.05$ , that was statistically highly significant.

The association of demographic variables like age, gender, birth order, education and occupation of parents, type of family, living area of child and mode of study in home was tested by chi square test and was significant with level of academic performance.

## **Conclusion**

The study findings revealed that there is a significant improvement in the level of academic performance after using multisensory learning activities in their learning process. It has eventually helped to improve the academic performance of slow learners. Thus it may be considered as mandatory during their academic endeavor.

## **Chapter - i**

### **INTRODUCTION**

**“Tell me I forget**

**Teach me and I may remember**

**Involve me and I learn”**

**- Benjamin Franklin**

#### **Background of the study**

The children of today are the future of tomorrow and this statement can be achieved only through learning. Learning is considered to be a skill, both within and beyond the walls of the classroom. It is an innate urge of every human being. It depends upon the environmental stimulation, opportunities and guidance one is able to receive. Learning is an overall process where a human absorbs information, memorizes and processes it for further use and processing. For most children, learning is acquired effortlessly as they progress through the school years. Children's literacy skills grow rapidly during elementary school years.

The segment of the lifespan that extends from age 6 years to 12 years has a variety of labels, each of which describes an important characteristic of the period. The middle years are often referred to as school age or school years. When they attain the school age, they begin to acquire the ability to relate a series of actions to mental representations that can be expressed both verbally and symbolically. This is the stage that Piaget describes, when children are able to use their thought process to experience events and actions.



During this period, their conceptual abilities become more flexible. They acquire the ability to perform cognitive operations and apply these new skills when thinking about objects, situations and events. Children with low learning skills are at a disadvantaged position when compared to children who can cope with the normal learning system. These children usually tend to drop out from the school system or the system rejects them, causing concern for the parents. They also pose significant educational difficulties in school because of their deficiencies in intellect and psychosocial skills. They differ average students in the rate of learning and they need much external stimulation or encouragement to do simple work.

A slow learner is a child who is able to learn educational skills but at a rate and depth below average as compared to the child's peers. Slow learners do not need special education because they do not have a medical problem, it is only because they do not perform well in schools due to their slow learning process. They have a hard time in grasping new concepts quickly even though they tend to work hard. Also they are quiet and shy and may have poor self confidence. They have trouble with abstract thinking and often have a short attention span. All of these problems cause them to have poor self esteem.

Typically, slow learners have struggled academically throughout school, often barely passing each grade level. Some of these students never received good reading instruction in their childhood. Identifying the core of the problem of learning disability is the first step to design effective treatment. To ensure slow learners success in schools, their rate of slow learning to be accommodated through specifically designed interventions in accordance with

their ability level. Before going toward the intervention, it is critical that teachers and parents should consider assessment through number of sources.

Multisensory Instruction is a type of remedial intervention that has been used successfully with individuals of all ages. The idea that learning experienced through all senses is helpful in reinforcing memory has a long history in pedagogy. From the earliest teaching guides educators have embraced a range of multisensory techniques in order to make learning richer and more motivating for learners. This term is used to refer to any learning activity that combines two or more sensory strategies to express information.

This approach was first developed by Orton Gillingham in the early 20<sup>th</sup> century. The method accommodates and utilizes the three learning modalities or pathways through which students learn – namely visual auditory and tactile. Unlike some scripted and rigid reading program, this approach is a system that allows flexibility. By combining auditory, visual, tactile and kinaesthetic elements the child gets three avenues to understand, remember and recall information. Also it enhances memory storage and retrieval by providing multiple triggers for memory.

The department of education defines multisensory as using visual, auditory, tactile modalities at the same time. Teachers working with slow learners have found multisensory approaches particularly valuable, as they help learners to make sense of information in a variety of ways. Activities that harness all the senses are excellent way to teach slow learners in schools. Indeed working with slow learners focuses on developing all the senses as fully as possible, using techniques such as multisensory environments.

“Children are not different than roses in their development and they are born with the capacity and desire to learn, they learn at different rates and they learn in different ways. If we can meet their needs, provide a safe nurturing environment and keep interfering with their doubts then they will all bloom at their own best time like roses”

### **Need and Significance of the study**

In India ironically, 10% of school going population constitutes to be the slow learners. The academic performance of school age children has come under scrutiny over the past decade.

Reporting figures from National Institute of Child Health and Human development. It is estimated that 20% of school age children are slow learners. In other report based on data from National center for educational statistics it is estimated that 35% of students were slow learners and predicted that they would continue to have learning difficulty without systematic & focused intervention. Child defense fund indicate that 20-30% of children experience academic difficulties during their elementary school years.

Nationwide, it is estimated that approximately 13-14% of school going children are slow learners. In world over 10 out every 100 school children are said to suffer from learning difficulties. Don Estmead said that 1 out of 5 children are slow learners. Today almost 3 million school age students receive special education services in their schools because of scholastic backwardness. Unfortunately, most schools fail to lend a sympathetic ear to hear their problems. As a result of these children are branded as failures.

Viewing scholastic backwardness in terms of poor academic achievement or repeated failure in grades, several TamilNadu school surveys in the past decade have recorded prevalence rates that range between 20 and 50%. Hence the trend is for early identification and early intervention for slow learners. With this population the focus of attention inevitably changes to that of remediation and the choice of remedial learning program to best address the student needs.

Considering the potential for emotional, societal and monetary repercussions of learning difficulty, it is imperative that empirically based studies be conducted that indicate the outcome of students with learning difficulty who undergo an intervention programme. Education for all is given special focus by the Government. In order to make it possible we have an obligation to systematically work for these groups. However in many classes, not all children perform well. There are few who perform below average. They do not perform well in examinations and their progress in class work and assignments is very poor. In the end, they are labeled as lazy. But these claims are not true.

A study was conducted in Nepal to assess the reason for slow learning in children, revealed that the factors behind slow learning are poor instruction, parents adverse behavior to them, and teachers negligence in the class.

Gajanan L Gulhane conducted a study on multisensory approach on academic performance of slow learners. The study was done in 50 school students, with low learning skills. All 50 students are involved in the program. While comparing the students performance after intervention, there was a significant improvement in them with the pretest.

Shelda Bairstow and Lesley Newhouse had done a study on multisensory approach in improving academic performance of slow learners in schools. Forty primary school children who had been experiencing learning difficulties were taught and tested using single subject and repeated measures. The result of this study strongly support the use of multisensory method as instructional technique for dramatic improvement in slow learners.

Rajshree S. Vaishnav conducted a study on learning style and academic achievement. A sample of 200 students from class 4<sup>th</sup>, 5<sup>th</sup> and 6<sup>th</sup> standard were selected for the study. Findings of the study revealed that multisensory approach by Visual, Auditory, and tactile approach had a positive high correlation and it showed a significant improvement in academic performance of slow learners.

Research done by Gardner has shown that human cognitive ability is pluralistic rather than unitary and that learners of any subject will make greater progress if they have opportunity to use their areas of strength to master the necessary material. In the classroom it is possible to motivate the learners by activating multiple ways of meaning making through the use of tasks relating to the different intelligences. Inorder to achieve the ultimate goal of student learning it is important to use a combination of teaching methods and to make the classroom environment as stimulating and interacting as possible. The various inventories on learning styles allow the children to gain insight which can improve their performance in academic and other areas.

Therefore, there is a need for parents and teachers to find out whether the children are slow learners. This is because when a teacher or parent has identified whether the child is a slow learner, then the approach of teaching and learning would

be different from the way normal learners are taught. So in order to improve their performance in schools, multisensory learning have proved to be very helpful and it provides the learners a sense of visual, auditory and tactile stimulation and will help to remember and recall the concepts they learned. Hence there is a greater need for special educational measures for slow learners to ensure maximum progress in their academic performance.

### **Statement of the Problem**

A study to evaluate the effectiveness of multisensory learning approach on academic performance of slow learners among school age children in a selected school at Kulasekharam.

### **Objectives of the Study**

1. To assess the academic performance of slow learners before multisensory approach .
2. To find out the effectiveness of multisensory approach on academic improvement of slow learners among school age children.
3. To find association between academic performance of slow learners among school age children and selected demographic variables such as age , sex , birth order , education and occupation of parents, type of family, living area of child and mode of study in home.

### **Hypothesis**

H1 ; There is a significant improvement in the academic performance of slow learners among school age children after using multisensory learning approach .

H2 ; There is a significant association between the academic performance of slow learners among school age children after using multisensory learning approach and selected demographic variables such as age , sex , birth order, education and occupation of parents, type of family, living area of child and mode of study in home.

### **Operational Definition**

#### **Evaluate**

It refers to the measurement of academic performance of slow learners among school age children by using modified Zimmerman's Academic Achievement Scale.

#### **Effect**

In this study , effect refers to improvement in academic performance among slow learners after using multisensory learning approach and is measured by modified Zimmerman's Academic Achievement Scale .

#### **Academic performance**

Academic performance is the outcome of education that is achieved by completion of home works, involvement in school activities , marks obtained in

weekly and monthly examinations which is measured by Modified Zimmerman's Academic Achievement Scale.

### **Multisensory learning approach**

In this study multisensory learning approach refers to use of visual, auditory , and tactile senses during their learning process for their better achievement by using pictures , models , postures , puzzles ,group activities, discussion and dramas.

### **Slow learners**

Slow learners refer to school children with low learning skills and ability and the rate and depth of learning is below average when compared to other children.

### **School age children**

In this study school age children refers to, the children with low academic achievement who are in between the age group of 8 – 10 years.

### **Assumptions**

1. There is a general perception that the rate and depth of learning may differ in each child.
2. There is a belief that slow learners have low learning skills
3. Multisensory learning approach may help to improve academic performance of slow learners .



### **Delimitations**

1. The study is delimited to government high school at kulasekharam.
2. The age of children is limited to 8 – 10 years.

### **Ethical Consideration**

The study was conducted after getting approval from dissertation committee of Sree Mookambika institute of medical sciences and getting formal permission from government high school Kulasekharam.

### **Conceptual Framework**

Conceptual framework is a global ideas about a concept in relation to a specific discipline. It is a visual diagram by which the researcher explains the specific area of interest.

The conceptual framework for the study was derived from General System theory of Von Bertalanffy (1986) who defined a system as a whole with interrelated part in which the parts have their own function. All living systems are open systems in which there is a continuous exchange of matter, energy and information that provide input for the system. Then the system transforms the input and this process is known as throughput. The energy of information is given off in to the environment as output. When output is returned in to the system as input, this process is known as feedback .All living systems are open in that there is a continuous exchange of matter energy.

***Input***

Input is the use of multisensory learning activities like pictures, visual materials, work sheets, poetry and in the form of role play.

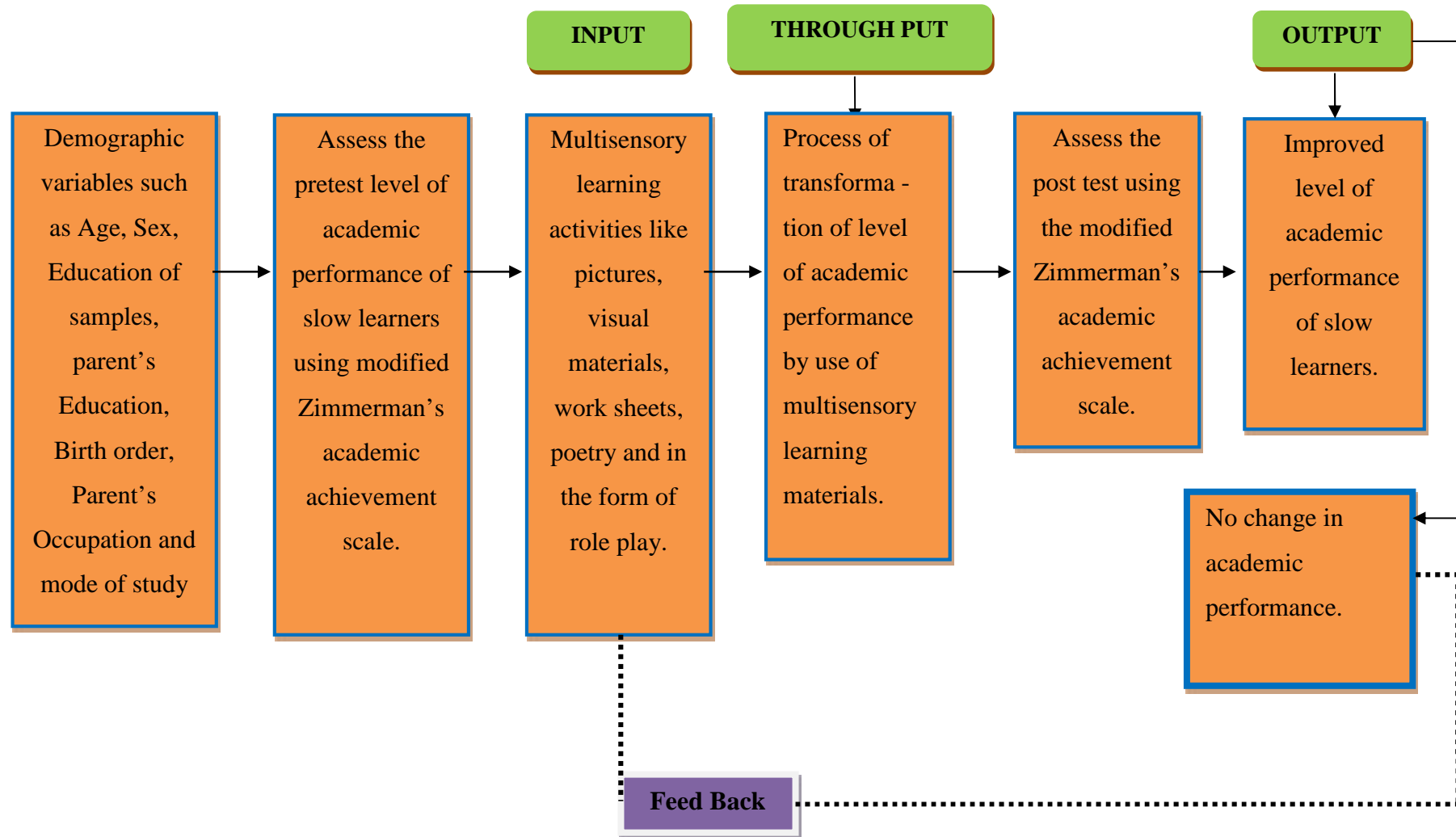
***Throughput***

Throughput is the process of transformation of level of academic performance by use of multisensory learning materials.

***Output***

Assessment of post test using the modified Zimmerman's academic achievement scale, revealed improved level of academic performance of slow learners among school age children.





**Figure: 1** Conceptual frame work based on Von Bertalanffy General system theory



## **Chapter - ii**

### **REVIEW OF LITERATURE**

Review of Literature refers to an extensive, exhaustive and systematic examination reviewed in depth, so as to broaden the understanding of the selected problem. The idea was to develop deeper insight into the problem area and to assess the effectiveness of multisensory learning approach on academic performance among slow learners in school age children.

The literature review is based on,

1. Reviews related to slow learners
2. Reviews related to academic performance
3. Reviews related to multisensory learning approach

#### **Reviews related to slow learners**

**Roja Princy (2012)** conducted a descriptive study to assess the knowledge and attitude of teachers regarding slow learners. Descriptive research design was adopted for the study. Target population was primary school teachers. A structured questionnaire for knowledge, and attitude scale for attitude assessment were used. The study findings revealed that most of the teachers had inadequate knowledge regarding slow learners but almost all (98.3%) had highly favourable attitude towards such children. A positive correlation  $r=+0.83$  was identified between the knowledge and attitude of teachers towards children with low learning ability. The study concluded that need for providing knowledge on slow learning is an important strategy to make teachers as powerful contributors towards children.

**Garg et al (2012)** evaluated teachers knowledge on slow learners in primary schools at Ahmedabad. 50 teachers were selected and they were given a structured questionnaire containing a list of pupil behaviour related to slow learning. The findings of the study revealed that 22% of teachers had adequate knowledge regarding slow learners and 78% of teachers had inadequate knowledge regarding slow learning in children.

A study was conducted by **Gysbers et al (2007)** on effectiveness of comprehensive guidance program in improving academic performance of slow learners. For this study 41 primary school children were selected by purposive sampling technique. The researcher used one group pretest post test design. Samples were selected by using academic achievement test. All the 41 students underwent a counselling program for one week. The findings of the study revealed that 83% of students reported academic improvement after intervention. And the study suggested that provision of counselling and guidance program at regular interval may show better performance among slow learners.

**Sunil Karande and MadhuinKulkerna (2002)** conducted a study to assess the factors leading to low academic performance in primary school children. The investigator randomly selected 400 primary school students with low learning abilities and assessed the factors leading to low academic performance in them. The findings revealed that 25% of low birth weight babies, 12% of children with ADHD, 20% with emotional problems, 25% with environmental factors, 18% with parental factors are at risk for school difficulties.

### **Reviews related to academic performance**

**Vellutino et al (2013)** conducted a study to assess the academic performance of children with learning disability. For this study 140 children were selected from five primary schools of Maharashtra. The poor readers were then assigned as random into tutored and non tutored groups. The tutored children received 30 minutes of individualized help daily according to their needs. While the untutored children served as control group. The intervention was given for a period of one month and the academic performance of children was assessed. The study findings revealed that 69% of tutored gained reading scores within the normal range after one month. Moreover, the untutored children maintained their old status.

A study was conducted by **Dr. S.S. Agarwal (2011)** on activity based learning in improving academic performance of children in primary schools of Chandrapur district. The objective of the study is to compare effectiveness of activity based learning with traditional method in primary schools. The investigator randomly selected two primary schools of Chandrapur district. The investigator used self prepared activities to develop activity based learning and also for data collection. A sample of 60 students were selected and divided into two groups. Experimental group was taught through activity based learning and control group taught through traditional method. The pre test mean for group A is 61.43 and group B is 66.20. The post test mean for group A is 80.77 and group B is 68.53. The findings revealed that activity based learning is more effective than traditional method of learning.

**Meltzer et al (2011)** studied 663 students and their 57 teachers to detect teacher's perceptions on academic performance of students with learning disability.



These students are rated based on five domains such as reading, writing, spelling, mathematics and organization. The findings of the study revealed a sharp discrepancy between the students with learning disability and their teachers. Teachers rated the students with learning disabilities as weak in their strategy use and below average in their academic performance in all five domains. These results added to the increasing body of knowledge indicating the efficiency of teachers in accurate identification of cases and in improving academic performance.

**Susan A Carlson et al (2010)** made an attempt to study the effectiveness of physical activity and academic achievement in elementary school. Totally 100 students were selected and divided into two groups. Experimental group comprised of 50 students and are involved in physical education activities 60 minutes a day, for one month. The control group comprised of 50 students and were not involved in physical activities. The data was collected from class room teachers and by using academic achievement response scale. The study revealed that the computed effect of physical activity is significant on 0.01 level and there exists a significant difference in physical activity and academic achievement of elementary school children.

In this study **Sangeetha Malik (2009)** explored on intervention training for academic improvement of primary school children. The aim was to investigate the impact of intervention training on mental abilities and learning abilities of school children with learning disability. 40 children of 6-8 years old from St. Paul School of Hisar city were selected. These 40 children were divided into experimental (20) and control (20) groups. To measure the cognitive ability Stanford Binet Intelligence scale was used. On the basis of performance of children in pretesting, intervention training was developed for experimental group. Intervention training was given to the group

for a period of one month for five days per week and two hours per day. The maximum gain of experimental group was 50%. The study revealed gain in reasoning ability and academic performance. The findings of present study prove that due to intervention training there was gain in all aspects of intellectual abilities of experimental group. Training of children with learning disabilities can make it possible for him to cover up earlier deficiencies and become an achiever.

### **Reviews related to multisensory learning approach**

**Rajshree. S. Vaishnav (2011)** conducted a study on multisensory learning style on academic performance of slow learners in primary school students at Nagpur. The study aimed to find out the effect of VAKT learning style in improving academic achievement of slow learners. The investigator selected 200 students by purposive sampling technique from various schools at Nagpur. After selecting the samples, multisensory learning style (VAKT) were used on their learning process for one month. The performance of students was assessed by using Stanford Binet rating scale. The study revealed the VAKT learning style has significant effect on academic performance of slow learners.

**Nyaga Solomon Njeru (2010)** conducted a study on influence of multisensory learning strategies on academic performance of children with learning disability in Nairobi country Kenya. The objective of this study is to identify whether differentiated teaching methods influence academic performance of learners with learning disability. Quantitative experimental research design was used. The study was conducted in 50 normal school going children with low learning skills. The samples were selected by convenient sampling technique and by classroom achievement tests. The study findings shown that differentiated teaching and learning

resources ensure personalized attention. Effective use of differentiated methods of instruction help the learners to achieve a high level of accuracy in their learning process. Findings of the study revealed a significant improvement in the post test after using multisensory learning strategy.

In this study **Gajanan L Gulhane (2009)** made an attempt to assess the effectiveness of multisensory learning approach on academic performance of students with learning disabilities in the primary school of Amaravathi district, India. The study aimed at determining the effectiveness of multisensory learning activities in improving academic performance of students. Experimental research design was adopted. Totally 100 students with low learning skills were selected and divided into two groups. Experimental group consists of 50 students and are involved in multisensory learning activities. The control group consists of 50 students with low learning skills. The data required for the study is collected by means of achievement test and interview schedule. The findings of the study revealed the mean value 21.70 and SD 4.20 for experimental group and mean value 16.40 and SD 2.56 for control group. It is observed that the obtained t value (7.68) is more than the table value at 0.01 level of significance. Therefore the study proved that the multisensory learning activities have significant effect on the academic performance of children with low learning skills.

**Phares, Barbara Georgeson (2008)** conducted a study on VAKT (multisensory) method on academic achievement of middle school students. Data was collected from twenty five students who were experiencing difficulty in their learning process. These twenty five students were randomly selected by using Bellard's academic assessment scale. The t test was used to determine the difference in the

standard scores of students after instruction. The mean standard score was 57.6. This resulted in a difference in the mean score of 2.7, which resulted in a significant improvement in the academic performance of students after intervention.

**Johnette Marie Scott (2008)** conducted a study on multisensory learning strategies for slow learners. The aim of the study was to develop learning skills in slow learners and to improve their academic performance. The investigator selected the pupils from 80-85 1Q from the general school population. Purposive sampling method was used in the selection of samples. A checklist consisting of several learning outcomes was prepared by the researcher and was used for the study. All the children with low learning ability are involved in the multisensory learning strategy. Post test was conducted using checklist. Findings of the study revealed a significant improvement in the posttest after using multisensory learning strategy.

**Dr. Sereen Jubran (2006)** conducted a study on using multisensory approach and its effects on students achievement at Jordanian schools. To achieve the purpose of the study, a pre / post test tool was constructed to measure the students academic achievement. The study revealed that the computed effect of multisensory learning approach is significant on 0.01 level and there exists a significant difference in multisensory approach and academic achievement. As a result of this experience the researcher concluded that the students were more engaged in learning when they were given a chance to use all their senses. Further more, using multi sensory approach is a powerful tool with which students can learn with entertainment.

**Gillian. A. Rai (2004)** conducted a study on the effectiveness of multisensory approach on academic achievement amongst underachievers in elementary schools. The study was conducted in 80 underachieving students in the elementary school.

Purposive sampling technique was used. To achieve the purpose of the study, 80 primary school children were selected by using Bellard's academic assessment scale. All the 80 children are involved in inclusive classroom activities such as visual, auditory and tactile methods. After intervention post test were conducted using academic achievement scale and there was a significant improvement in the academic performance after providing multisensory activities.

**P. Krishna Kumar, MG. Geetha Ramakrishnan Palat (2003)** made an attempt to study the effectiveness of multisensory learning program for slow learners in primary school. The study period was two months. 18 children who satisfied the inclusion and exclusion criteria were taken up for the study. The selected children were divided into five groups in the class and were educated using multisensory materials from 10 to 1 pm. The academic functioning of each child was noted. At the end of two month's, test papers in reading, writing were conducted and evaluated. Paired t test was used to assess the improvement in academic functioning after the end of training program. The findings revealed that 67% of children had significant improvement in their academic functioning as evidenced by the outcome of the final test paper.

### Chapter - iii

## RESEARCH METHODOLOGY

Research Methodology is a way to solve the research problems systematically, it may be understood as a science of studying how research is done scientifically (CR. Kothari) .It involves a series of procedure in which researcher starts from initial identification of the problem to its final conclusion. This chapter provides a brief description of different steps to conduct this study. It includes research approach, research design, setting of the study, variables, population, criteria for selection of sample, data collection tool, validity and reliability of tool, data collection procedure and plan for data analysis.

### Research Approach

To accomplish the objectives of the study, the investigator used quantitative approach and the study was intended to evaluate the effectiveness of multisensory learning approach on academic performance of slow learners among school age children.

### Research Design

The design used in this study was pre experimental design with one group pre test post test design.

E       $O_1 \times O_2$

$O_1$  - Pre assessment of academic performance before multisensory approach

X - Multisensory learning approach

O<sub>2</sub> - Post assessment of academic performance after multisensory approach.

### **Setting of the study**

This study was conducted in St. Ursulas Primary School at Kulasekharam. Distance between Mookambika Nursing College and the school is 7 kms. Total strength of the school is 980 students. There is 147 students in fourth standard and 153 students in fifth standard.

### **Variables**

**Independent variable:** Multisensory learning approach

**Dependent Variable :** Improvement in academic performance

**Demographic variable:** Age, Sex, Birth order, standard of studying ,education and occupation of parents , living areas of subject, type of family and mode of study in home.

### **Population**

The population in this study is selected from the total school population through assessment of learning ability by using Modified Zimmerman's Academic Achievement Scale. The school age children who are obtaining the assessment score below 40% were selected for the study and their age group is in between 8-10 years.

### **Sample size**

The sample size consists of 60 school age children with low learning ability.

### **Sampling technique**

Purposive sampling technique was adopted for the study. The sample was selected based on inclusion and exclusion criteria.

### **Criteria for sample selection**

#### **Inclusion Criteria :**

- ❖ The students between the age group of 8-10 years with below average marks.
- ❖ Male and Female children
- ❖ Children who are obtaining below 40% score in assessment with modified Zimmer man's academic achievement scale.

#### **Exclusion Criteria :**

- ❖ Children who were absent during the data collection period.

### **Data collection tool**

After extensive review of literature and guidance of subject experts, the tool was prepared. The tool was organized into two sections, section A and section B.

#### **Section A : Demographic variables :**

Demographic data consists of 10 items seeking information about,

1. Age
2. Sex



3. Birth order
4. Standard of studying
5. Type of family
6. Education of parents
7. Occupation of parents
8. Living area of subjects
9. Special tuition if any
10. Mode of study in home

**Section B Consists of Modified Zimmerman's Academic Achievement Rating Scale** to assess the academic performance of slow learners among school age children. It has 20 items related to academic and other areas of child's performance.

Based on the items, scores are interpreted as, 1 for never, 2 for rarely, 3 for occasionally, 4 for pretty well and 5 for very well.

#### **Score Interpretation**

Score	Interpretation
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81 – 100	Very well
61 – 80	Pretty well
51 – 60	Occasionally
41 – 50	Rarely
Below 40	Never

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### **Testing of tool**

#### **Validity**

Content validity of tool was established from five experts, 4 experts from the field of pediatric nursing and one from pediatric medicine. The experts suggested to simplify the language and to reorganize some items. Appropriate modifications and correction were made and the tool was finalized.

#### **Reliability**

Reliability of the tool was identified by testing the tool in three samples using split half method and evaluated by using spearman's correlation formula. Since computed correlation coefficient was high  $r = + 0.94$ , reliability of the tool was established.

### **Pilot study**

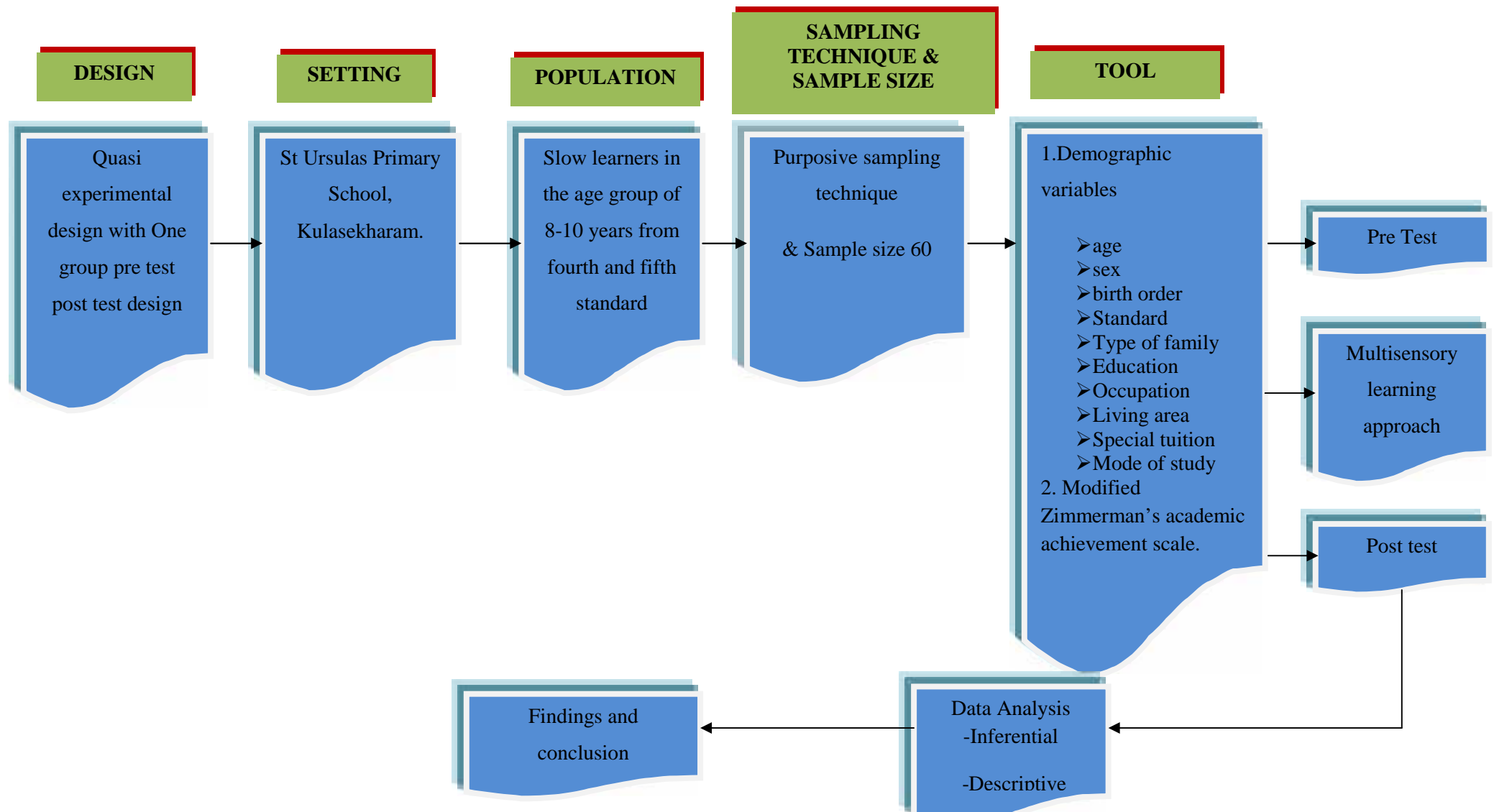
Pilot study was conducted for a period of six days to find out the feasibility and practicability of the study. Prior permission was obtained from the Principal, by explaining the objectives of the study. Six samples were selected from fourth standard. Data collection was done by using modified Zimmerman's Academic Achievement Scale. Pilot study findings revealed that the study was feasible and the tool was appropriate for the study.

### **Data collection procedure**

A prior written permission was obtained from the Headmistress of St. Ursulas Primary School, Kulasekharam. After self introduction, nature and objectives of the study was explained to obtain maximum cooperation. Purposive sampling method was used to select the samples. Pre test was conducted by using Modified Zimmerman's Academic Achievement Scale. Those students who obtained score below 40% in pretest were provided with multisensory learning for a period of 18 days. Multisensory materials such as visual materials [flash cards, charts, posters, pictures, puzzles], auditory [word repetitions, songs], tactile [models, mathematical materials, shapes], kinaesthetic including [dramas, role play and actions] were provided in two sessions daily in accordance with their regular portions, one hour in morning after completion of morning classes and one hour in evening immediately after completion of their afternoon classes. At the completion of each sessions worksheets were given and three exams were conducted from that portions at the end of each weeks. After intervention post test was conducted and the scores were taken for analysis. At the end of the successful data collection, conveyed thanks to the Headmistress, and teachers and winded up the study.

### **Plan for data analysis**

The collected data is planned to be analyzed using descriptive and inferential statistics. The data is presented in the form of tables and diagram.



**Figure. 2 Schematic representation of Research design**



## Chapter - iv

### DATA ANALYSIS AND INTERPRETATION

Statistical analysis is a method of rendering quantitative information meaningful and intelligible. It is intended to light the findings of the study.

This chapter deals with the analysis and interpretation of data collected in accordance with the objectives stated for the study. The data collected was analyzed by using descriptive and inferential statistics.

The analysis and interpretation of academic performance were made by 't' test. The association between demographic variables with academic performance was analyzed and interpreted by  $\chi^2$  (chi square) test.

#### **The objective of the study are :**

1. To assess the academic performance of slow learners before multisensory approach .
2. To find out the effectiveness of multisensory approach on academic improvement of slow learners among school age children.
3. To find association between academic performance of slow learners among school age children and selected demographic variables such as age , sex , birth order , education and occupation of parents, type of family, living area of child and mode of study in home.

### **Presentation of data**

**Findings are grouped and presented under the following headings :**

#### **Section A**

This section deals with the frequency and percentage distribution of the sample according to the demographic variable and academic performance.

#### **Section B**

This section deals with frequency and percentage distribution of samples according to the pre test and post test level of academic performance.

#### **Section C**

This section deals with the effectiveness of Multisensory learning approach to improve academic performance of slow learners.

#### **Section D**

This section deals with the association between the level of academic performance and selected demographic variables.



## SECTION A

This section deals with the frequency and percentage distribution of the sample according to the demographic variable and academic performance.

Table : 1

Frequency distribution of demographic variables of study subjects.

N = 60

Sl. No.	Demographic variable	Frequency (f)	Percentage (%)
1.	<b>Age of samples</b>		
	(a) 8 years	13	21.7%
	(b) 9 years	33	55%
	(c) 10 years	14	23.3%
2.	<b>Sex</b>		
	(a) Male	33	55%
	(b) Female	27	45%
3.	<b>Birth order</b>		
	(a) First	23	38.3%
	(b) Second	28	46.7%
	(c) Third and above	9	15%
4.	<b>Standard of Studying</b>		
	(a) Fourth	37	61.7%
	(b) Fifth	23	38.3%

Table 1 continued...

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**5. Education of Parents**
**Father**

(a) Uneducated	10	16.7%
(b) Primary	26	43.3%
(c) Hr. Secondary	18	30%
(d) Degree	6	10%

**Mother**

(a) Uneducated	4	6.7%
(b) Primary	28	46.7%
(c) Hr Secondary	20	33.3%
(d) Degree	8	13.3%

**6. Occupation of Parents****Father**

(a) Daily wages	36	60%
(b) Private employee	15	25%
(c) Government Employee	7	11.7%
(d) Unemployed	2	3.3%

**Mother**

(a) Daily wages	16	26.7%
(b) Private employee	10	16.7%
(c) Government Employee	5	8.3%

(d) House wife	29	48.3%
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Table 1 continued...

7.	<b>Type of Family</b>		
	(a) Nuclear	35	58.3%
	(b) Joint	25	41.7%
8.	<b>Living area of child</b>		
	(a) Home	42	70%
	(b) Hostel	18	30%
9.	<b>Special tuition</b>		
	(a) Yes	19	31.7%
	(b) No	41	68.3%
10.	<b>Mode of study in home</b>		
	(a) Self study	32	53.3%
	(b) Parental guidance	28	46.7%

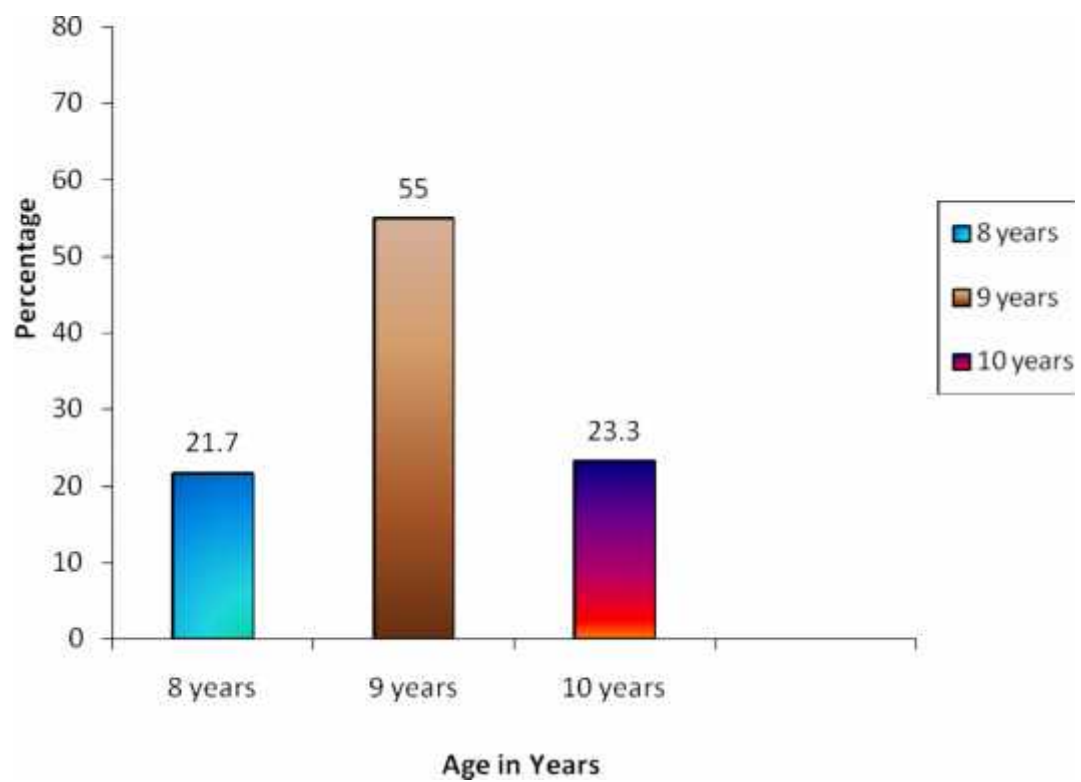
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The above table depicts that 13(21.7%) children were in age group of 8 years, 33 (55%) were in 9 years and 14 (23.3%) were in the age group of 10 years. Gender wise distribution shows 33 (55%) of the selected school age children were males and 27 (45%) were females. In terms of birth order 23 (38.3%) of selected school age children were first in birth order, 28 (46.7%) were second in birth order and 9 (15%) were third in birth order. Regarding education of mother 4(6.7%) were educated, 28(46.7%) completed their primary education, 20 (33.3%) have completed Hr. Secondary education and 8 (13.3%) were degree holders. As per their standard of studying 37(61.7%) were from fourth standard and 23 (38.3%) were from fifth standard.

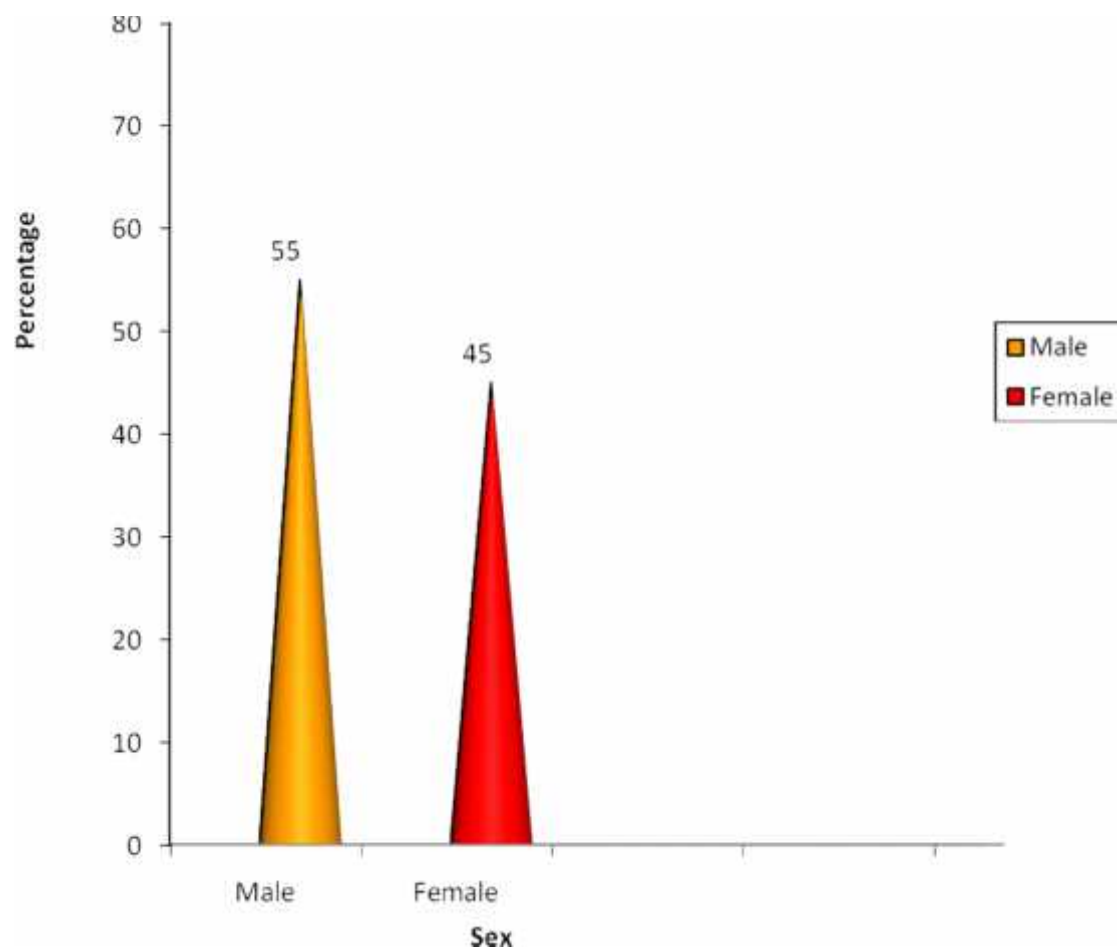
With regards to type of family 35 (58.3%) belongs to nuclear family, 25 (41.7%) belongs to joint family. With regards to living area of child 42 (70%) were living in home and 18 (30%) were in hostel. In terms of their mode of studying in home 32 (53.3%) learn by self study and 28 (46.7%) have parental guidance in their study.

The above findings are presented as figures from figure 3 to figure 12,

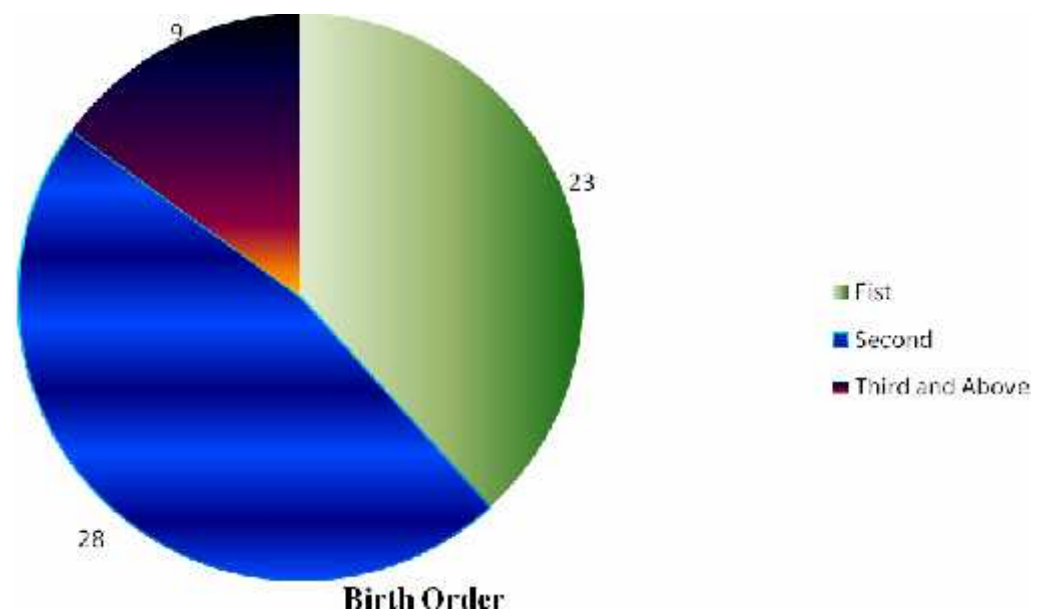
- Bar diagram representing distribution of samples according to age
- Bar diagram representing distribution of samples according to sex
- Pie diagram representing distribution of samples according to birth order
- Bar diagram representing distribution of samples according to standard of studying
- Bar diagram representing distribution of samples according to educational status of parents
- Bar diagram representing distribution of samples according to occupation of father
- Bar diagram representing distribution of samples according to occupation of mother
- Bar diagram representing distribution of samples according to type of family
- Bar diagram representing distribution of samples according to living area of child
- Bar diagram representing distribution of samples according to special tuition
- Bar diagram representing distribution of samples according to mode of study in home



**Figure . 3** Percentage Distribution of Demographic Variables According to age

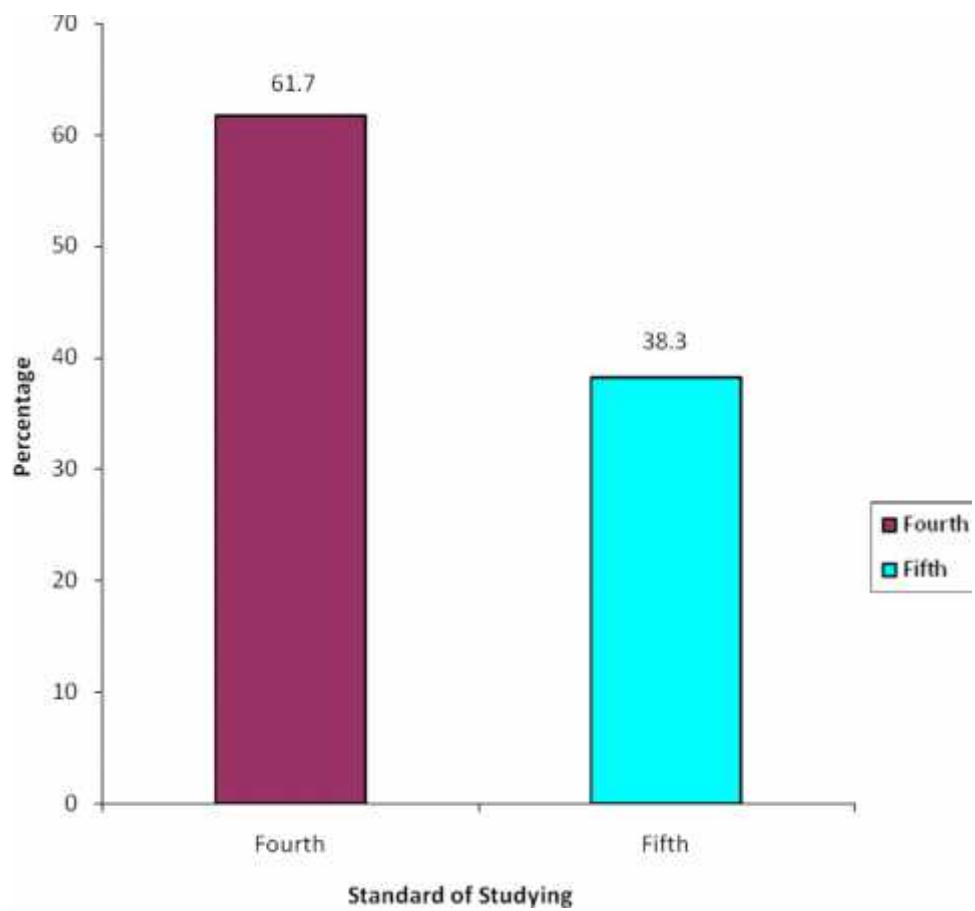


**Figure . 4 Percentage Distribution of Demographic Variables According to sex**

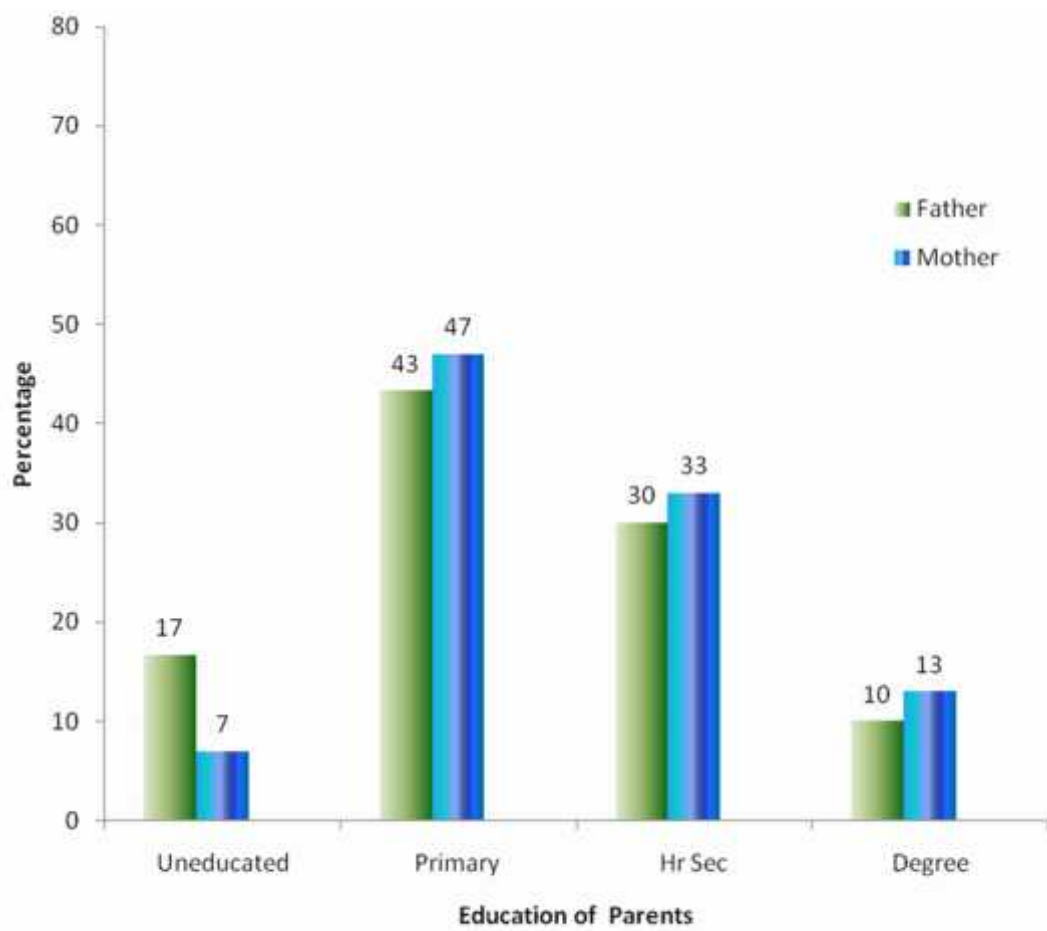


**Figure . 5 Percentage Distribution According to Birth Order**

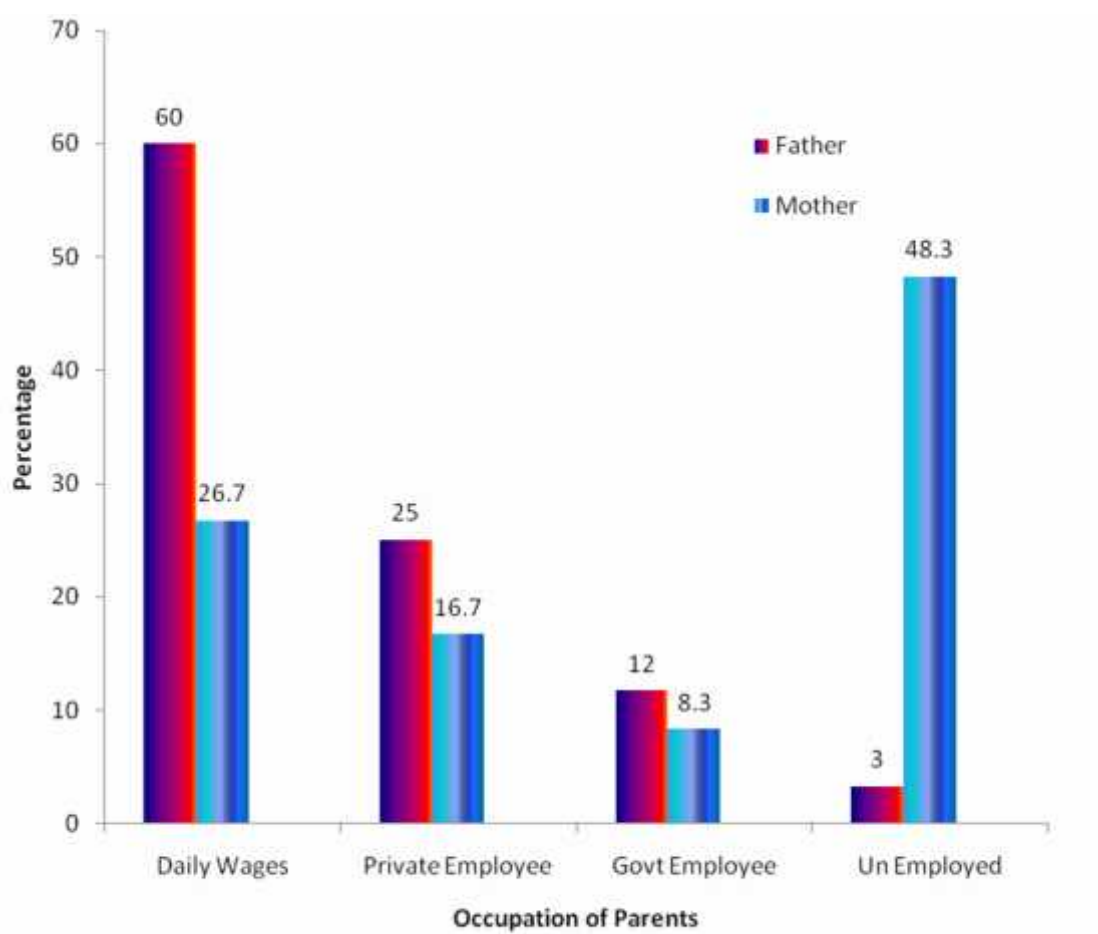




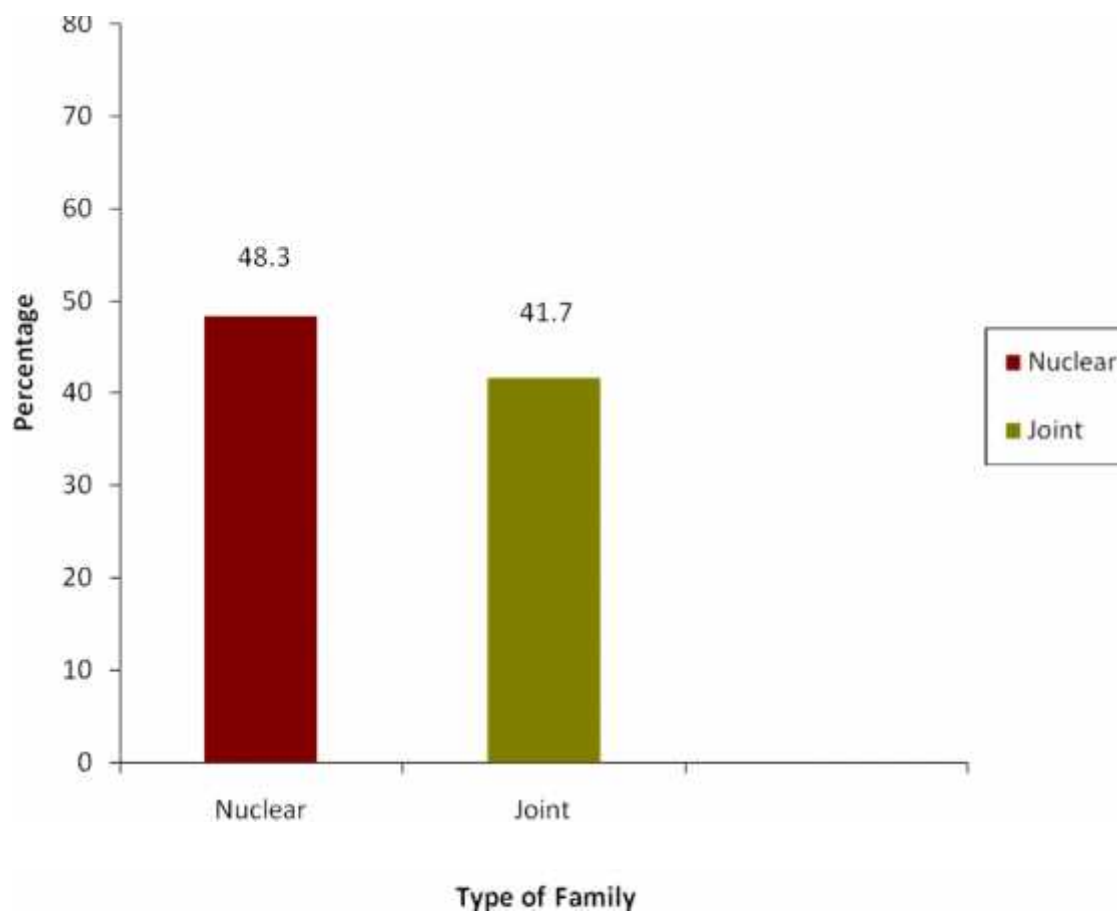
**Figure. 6 Percentage Distribution of Demographic Variables According to Standard of Studying**



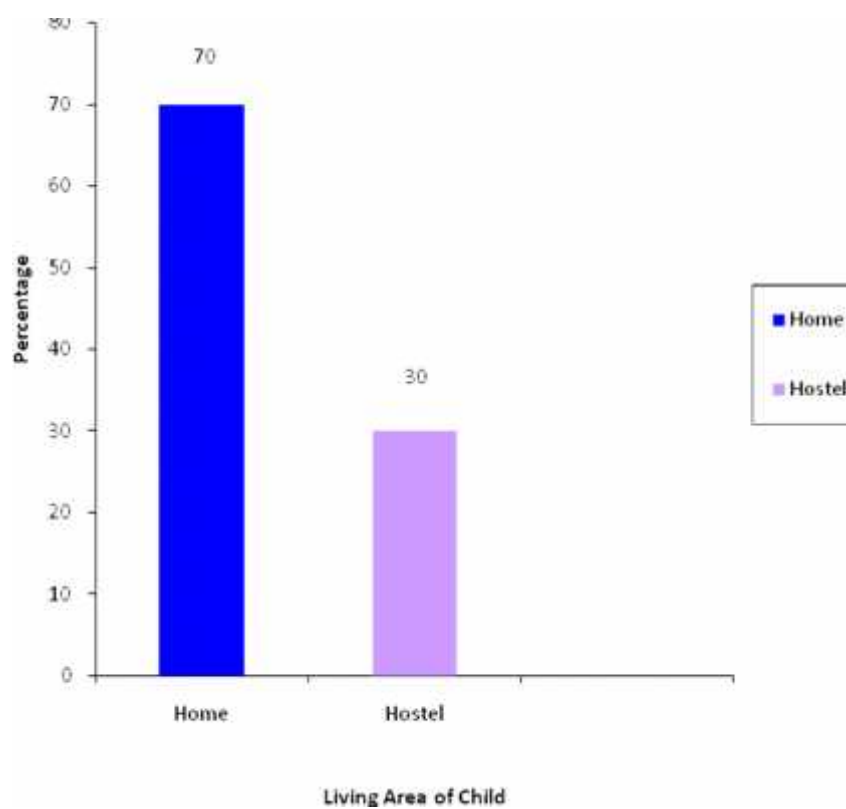
**Figure . 7 Percentage Distribution of Demographic Variables According to Education of Parents.**



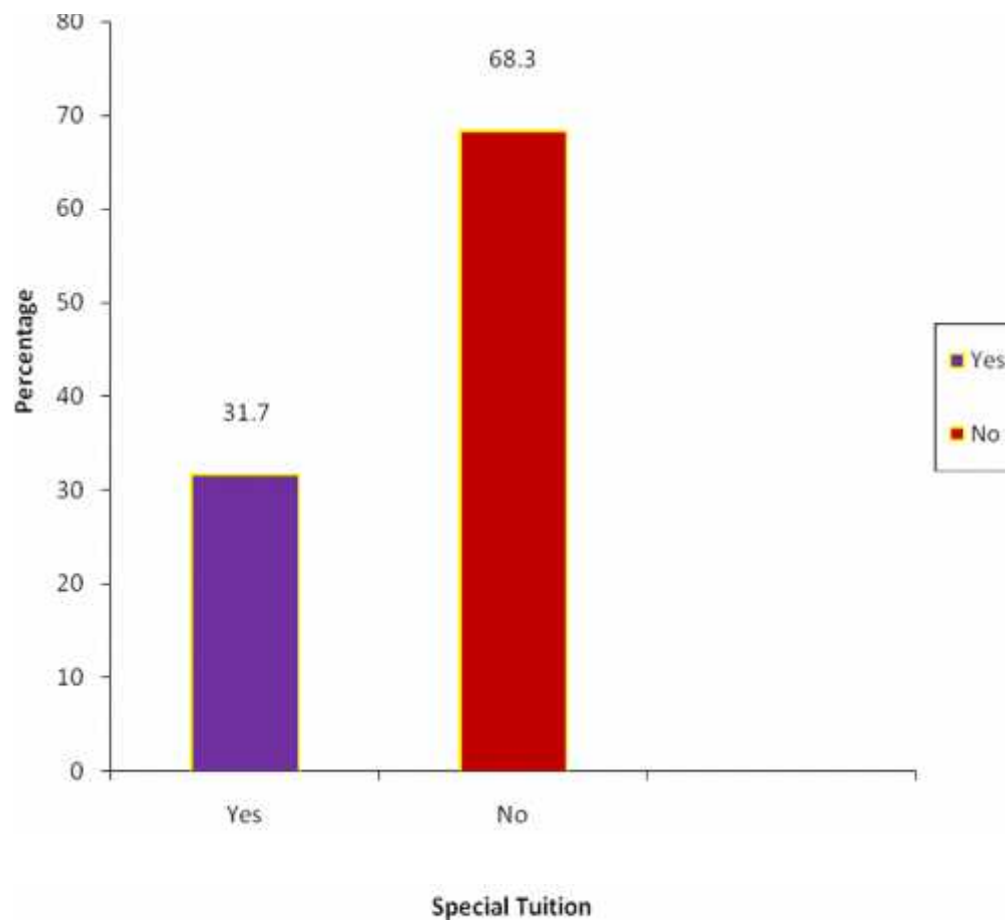
**Figure . 8** Percentage Distribution of Demographic Variables According to Occupation of Parents



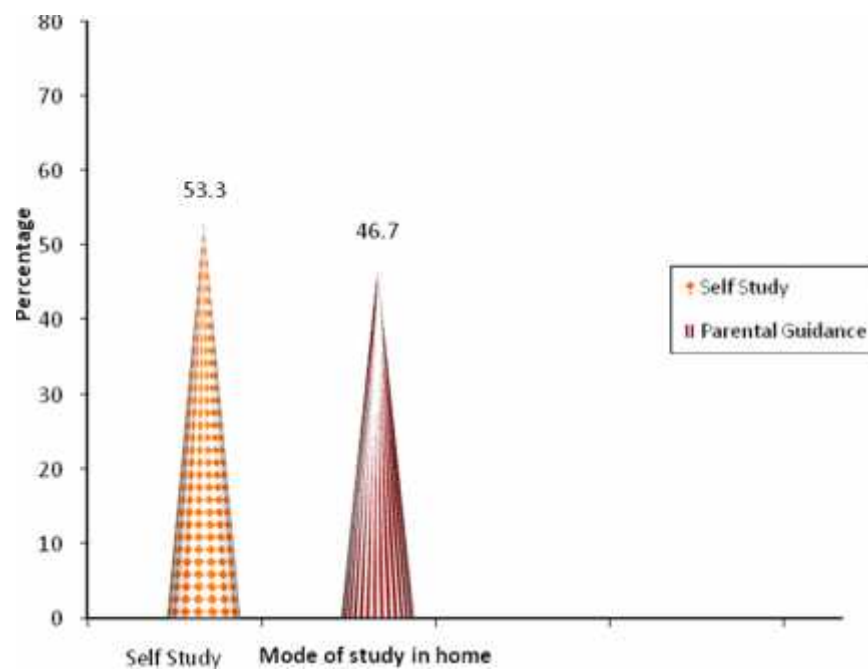
**Figure. 9 Percentage Distribution of Demographic Variables According to Type of Family**



**Figure. 10 Percentage Distribution of Demographic Variables According to Living Area of Child**



**Figure : 11 Percentage Distribution of Demographic Variables According to Special Tuition**



**Figure . 12 Percentage Distribution of Demographic Variables According to Mode of Study in Home**

## SECTION : II

Table : 2

Frequency and percentage distribution of samples according to the pretest and post test level of academic performance

N = 60

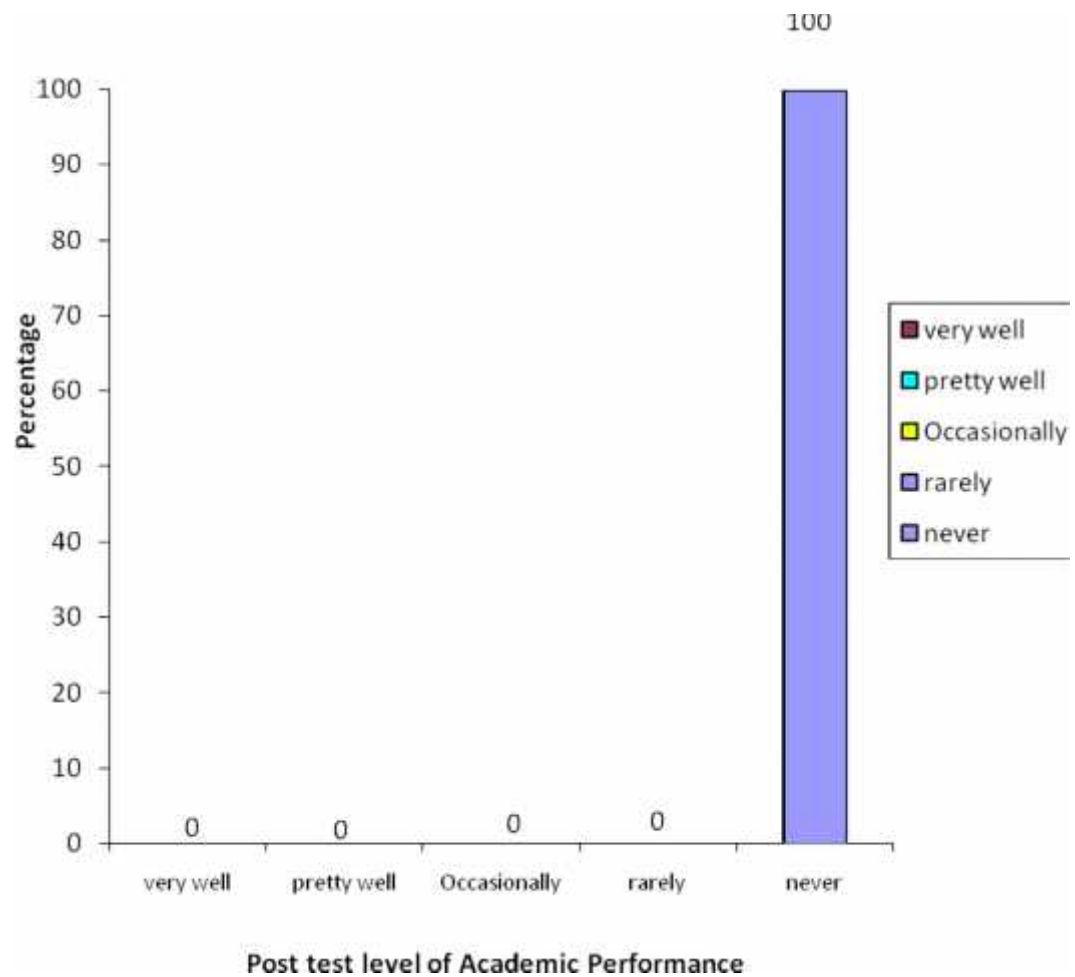
Level of academic performance	Pre test		Post test	
	Frequency (F)	Percentage (%)	Frequency (F)	Percentage (%)
Very Well	-	-	-	-
Pretty well	-	-	19	31.7%
Occasionally	-	-	40	66.7%
Rarely	-	-	1	1.6%
Never	60	100%	-	-

The above table shows the frequency and distribution of sample according to the level of academic performance. Table 2, shows that, in pretest all the 60 samples are under never category that is the score below 40 marks in assessment with modified Zimmerman's academic achievement scale.

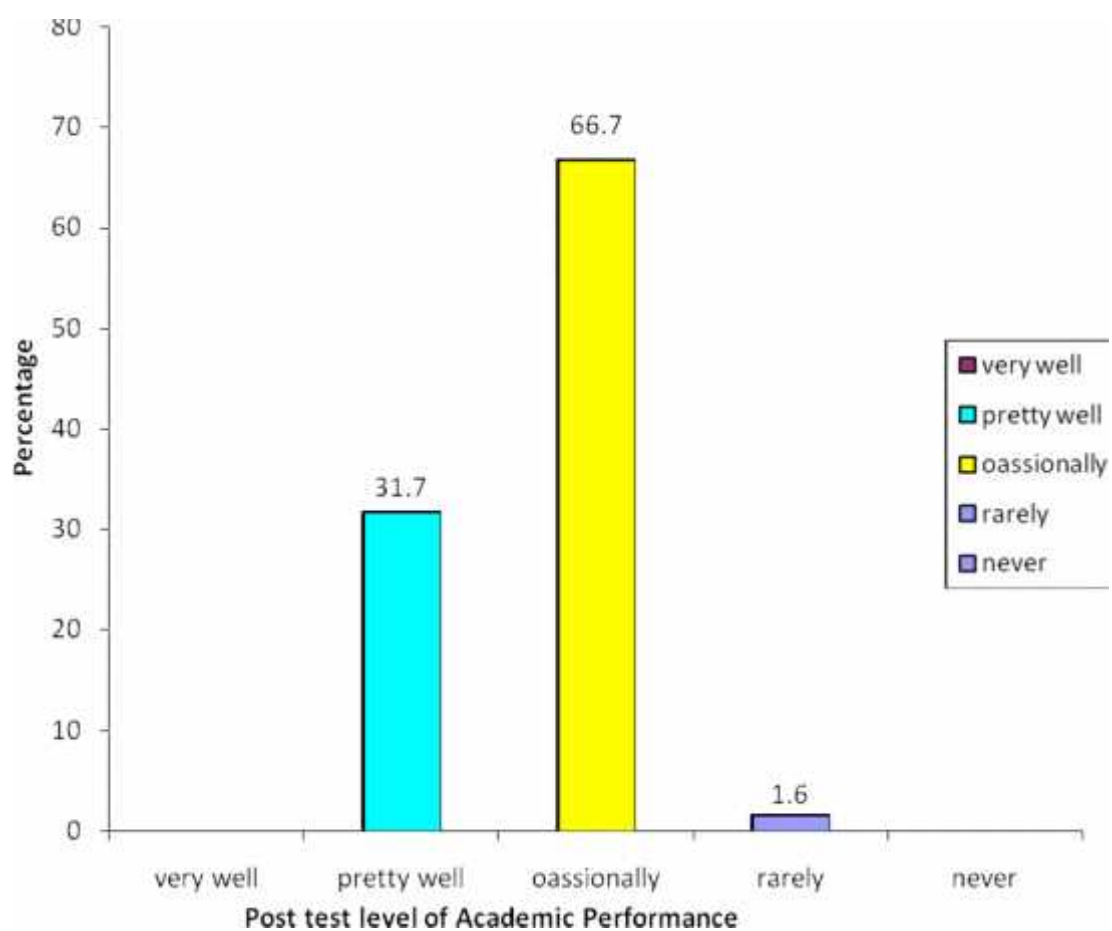
In post test 19 (31.7%) were under pretty well category, 40 (66.7%) were in occasional category and 1 (1.6%) were under rare category.

The above findings are presented in figure 13,14





**Figure : 13** Frequency and Percentage Distribution of Samples According to Pretest Level of Academic Performance



**Figure. 14** Frequency and Percentage Distribution of Samples According to the Posttest Level of Academic Performance

### SECTION : III

#### Effectiveness of Multisensory learning approach to improve academic performance of slow learners;

Table :3

Effectiveness of Multisensory learning approach in improving academic performance of slow learners.

N = 60

	Mean	SD	Df	Mean difference	t-value	Table value
Pre test	30.4	4.76				
			59	27.6	37.8*	2.00
Post test	60.1	4.77				

**\*Significance :  $P < 0.05$**

The above table shows the pre and post test academic performance with their consecutive mean values and test of significance. The pre test mean score was 30.4 and the post test score was 60.1. It revealed that there is a significant improvement in the academic performance of slow learners and the improvement was statistically highly significant ( $t=37.8$ ,  $P < 0.05$ ).

## SECTION : IV

**This section deals with association between the level of academic performance and selected demographic variables;**

Table : 4

Association between the academic performance of slow learners and selected demographic variables

N = 60

S. No	Demographic Variables	Above mean	Below mean	$t^2$	df	Table Value
1.	<b>Age of Samples</b>					
	a)8years	5	8			
	b)9years	9	24	0.23	2	5.99
	c)10 years	5	9			
2.	<b>Sex</b>					
	(a) Male	9	24	1.21	1	3.841
	(b) Female	11	16			
3.	<b>Birth Order</b>					
	(a) First	8	15			
	(b) Second	7	21	0.79	2	5.99
	(c) Third & above	4	5			
4.	<b>Standard of Studying</b>					
	(a) Fourth	12	25	0.026	1	3.841
	(b) Fifth	8	15			

Table 4 cont.....

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**5. Education of Parents**
**Father**

(a) Uneducated	1	9			
(b) Primary	10	16	0.78	3	7.815
(c) Hr. Secondary	7	11			
(d) Degree	3	3			

**Mother**

(a) Uneducated	2	2			
(b) Primary	5	23	2.15	3	7.815
(c) Hr. Secondary	8	12			
(d) Degree	3	5			

**6. Occupation of Parents****Father**

(a) Daily wages	11	25	2.37	3	7.815
(b) Private employee	6	9			
(c) Government employee	2	5			
(d) Unemployed	0	2			

**Mother**

(a) Daily wages	7	9	0.97	3	7.815
(b) Private employee	3	7			
(c) Government employee	1	4			
(d) Housewife	8	21			

**7. Type of Family**

(a) Nuclear	14	21	1.68	1	3.841
(b) Joint	6	19			

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Table 4 cont.....

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8.	<b>Living area of child</b>					
	(a) Home	11	31	0.97	1	3.841
	(b) Hostel	7	11			
9.	<b>Special Tuition</b>					
	(a) Yes	7	12			
	(b) No	12	29	0.34	1	3.841
10.	<b>Mode of study in home</b>					
	(a) Self study	11	21			
	(b) Parental guidance	8	20	0.25	1	3.841

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The above table indicates that there is no significant association between demographic variables and the academic performance of slow learners among school age children.

## **Chapter - v**

### **RESULT AND DISCUSSION**

This study was conducted to evaluate the effectiveness of multisensory learning approach in improving the academic performance of slow learners among school age children. One group pre and post test design was used for the study. The findings of the study were based on the statistical analysis of the data collected. To find out the effectiveness of multisensory learning approach the investigator used paired t' test and chi square was used to find out the association between academic performance and the demographic variables.

#### **Objectives of the study**

1. To assess the academic performance of slow learners before intervention
2. To find out the effectiveness of multisensory approach on academic improvement .
3. To find association between academic performance of slow learners and selected demographic variables such as age , sex, birth order , education and occupation of parents, type of family, living area of child and mode of study in home.

#### **Discussion on the study findings**

##### **Distribution of the samples based on demographic variables**

The samples were selected based on the inclusion criteria. The characteristics of samples are discussed below,

##### **Table 1;**

Shows the distribution of subjects according to the demographic variables.

- Gender wise distribution shows 33[55%] of the school age children were males and 27[45%] were females.

- In terms of birth order ,23[38.3%] of selected school age children were first in birth order,28[46.7%] were second in birth order and 9[15%] were third in birth order.
- Regarding education of mother, 4[6.7%] were uneducated, 28[46.7%] completed their primary education, 20[33.3%] have completed higher secondary education and 8[13.3%] were degree holders.
- With regards to type of family35[58.3%] belongs to nuclear family, 25[41.7%] belongs to joint family.
- With regards to living area of child 42[70%] were living in home and 18[30%] were in hostel.
- In terms of their mode of study in home 32[53.3%] learns by self study and 28[46.7%] have parental guidance in their study.

**The first objective of the study was to assess the academic performance of slow learners among school age children before multisensory approach.**

Table 2; shows that all the 60 samples are under never category [that is the score below 40 marks], in assessment with modified Zimmerman's academic achievement scale. The mean pretest score is 30.4 and standard deviation 4.76.

**The second objective was to evaluate the effectiveness of multisensory learning approach on academic performance of slow learners.**

With the view of previous objective the investigator has compared the pre and post test level of academic performance with their consecutive mean values and test of significance. The pretest mean score was 30.4 and the post test score was 60.1. It revealed that there is a significant improvement in the level of academic performance of slow learners and the improvement was statistically highly significant[t=38.3,p<0.05].

In this study, the investigator found that there is a significant improvement in the academic performance of slow learners after using multisensory learning approach, and thus the first hypothesis[H1] supported this study.



The research findings were congruent with the study conducted by Gajanan L Gulhane (2009) to assess the effectiveness of multisensory learning approach on academic performance of students with learning disabilities in the primary school of Amaravathi district, India. The study aimed at determining the effectiveness of multisensory learning activities in improving academic performance of students. Experimental research design was adopted. Totally 100 students with low learning skills were selected and divided into two groups. The data required for the study is collected by means of achievement test and interview schedule. The findings of the study revealed the mean value 21.70 and SD 4.20 for experimental group and mean value 16.40 and SD 2.56 for control group. It is observed that the obtained t value (7.68) is more than the table value at 0.01 level of significance. Therefore the study proved that the multisensory learning activities have significant effect on the academic performance of children with low learning skills.

**Third objective of the study is to determine the association between the level of academic performance and demographic variables.**

The aim of this objective is to determine the association of academic performance and demographic variables such as age, sex, birth order, type of family, education of parents and mode of study in home.

In this study the investigator found that there was no significant association between the level of academic performance and demographic variables such as age, sex, birth order, type of family, education of parents and mode of study in home, and thus the research hypothesis[H2], there is a significant association between the academic performance and demographic variables not supported this study.

The findings of the study is congruent with the study conducted by Nyaga Solomon Njeru (2010) on influence of multisensory learning strategies on academic performance of children with learning disability in Nairobi country Kenya. The objective of this study is to identify whether differentiated teaching methods influence academic performance of learners with learning disability. Quantitative experimental research design was used. The study was conducted in 50 normal school going children with low learning skills. The samples were selected by convenient sampling technique and by classroom achievement tests. The study findings shown that

differentiate teaching and learning resources ensures personalized attention. Effective use of differentiated methods of instruction helps the learners to achieve a high level of accuracy in their learning process. Findings of the study revealed a significant improvement in the post test after using multisensory learning strategy and no significant relationship was noted between the academic performance and demographic variables.

### **Summarizing up of all research findings**

1. The research hypothesis [H1] ,there is a significant improvement in the academic performance of slow learners after using multisensory learning approach was supported.
2. The research hypothesis [H2] ,is a significant association between the academic performance and selected demographic variables such as age , sex , birth order , education and occupation of parents ,type of family and mode of study in home, was not supported this study.



## **Chapter - vi**

### **SUMMARY AND RECOMMENDATION**

This chapter deals with the summary of the study and the conclusion drawn from the study. It also explains the limitations, implications and recommendations of the study for different areas like nursing education, nursing administration, nursing practice and nursing research.

#### **Summary**

Having the presumed knowledge of existence of slow learners among school going children and the availability of possible interventions to improve their academic performance, the investigator has undertaken a study to evaluate the effectiveness of multisensory learning approach in improving the academic performance of slow learners among school age children in a selected primary school with the following objectives.

#### **Objectives of the study**

- 1.To assess the academic performance of slow learners before intervention
- 2.To find out the effectiveness of multisensory approach on academic improvement .
- 3.To find association between academic performance of slow learners and selected demographic variables such as age , sex, birth order , education and occupation of parents , type of family, living area of subjects and mode of study in home.

#### **Hypothesis**

**H1** ; There is a significant improvement in the academic performance of slow learners after using multisensory learning approach .

**H2** ; There is a significant association between the academic performance and selected demographic variables such as age , sex , birth order , education

and occupation of parents, type of family, living area of subjects and mode of study in home.

A pre experimental one group pretest post test design was found to be suitable for this study. The setting of the study was St. Ursulas primary school kulasekharam.

The tool for the study had two parts. The first part of the tool consists of demographic variables. The second part of the tool was modified Zimmerman's Academic Achievement Scale which include 20 items related to academic and other areas of child's performance. The reliability of the tool was measured by using split half method in which the value of  $r'$  is 0.94. The researcher selected the samples by using purposive sampling technique. The population of the study was 60 school age children with low learning ability. The study period was one month.

The collected data were analyzed based on descriptive and inferential statistics.

### **Findings of the study**

The findings of the study revealed that the pretest mean score as 30.4 and the post test mean score as 60.1. A comparison was done between the pre and post test level of academic performance by paired  $t'$  test. The  $t$  test value was 38.3 at  $p < 0.05$ , that was statistically highly significant.

The association of demographic variables like age, gender, birth order, education and occupation of parents, type of family, living area of child and mode of study in home was tested by chi square test and was not significant with the level of academic performance.

### **Conclusion**

The study findings revealed that there is a significant improvement in the level of academic performance after using multisensory learning activities in their learning process. It has eventually helped to improve the academic performance of slow learners. Thus it may be considered as mandatory during their academic endeavor.

### **Nursing implication**

The present study proves the effect of multisensory learning approach on academic performance of slow learners among school age children in a selected school at kulasekharam. The intervention is easy to implement, less cost and easy to disseminate the information. Therefore the findings of the study have considerable implication on nursing education, practice, administration and research.

#### **Nursing Education**

1. The nurse can use the findings of the study while taking classes.
2. Revision of nursing curriculum can be done by incorporating learning problems in areas like pediatric, psychiatric and community nursing.
3. In service education can be given to the community health nurses regarding identification of learning disorders by school health programmes.

#### **Nursing Practice**

1. Study findings implicate the necessity for educating school teachers regarding multisensory learning activity to train their students.
2. Community health nurse can visit the school and provide health education to teachers about problems related to learning and the importance of various activities to improve the academic performance of slow learners.
3. Health education sessions can be arranged for school teachers who have poor knowledge regarding identification and support of slow learners.

#### **Nursing Research**

1. There is a need for extensive and intensive research in this area. Small scale projects can be conducted to identify such children and train them.
2. Abstract of the research can be published in the nursing journal, so that further research on related topics is possible.

3. Findings of the study will provide baseline information that can be used for further studies in the area.
4. Junior researcher also can choose this topic to do their research work.

### **Limitation**

1. The study was restricted to a selected school at Kulasekharam.
2. The age of children is limited to 8-10 years.
3. The sample size was limited to 60 samples.
4. Data collection period is one month.

### **Recommendations of the study**

1. A similar study can be undertaken on a larger scale for making a more vivid generalization.
2. A study can be done to analyze the practice of teachers towards learning disabled children.
3. The study can be done to compare the effectiveness among male and female children.
4. The study can be done to screen anxiety disorder ,depression and to provide various interventions to bring up their concentration level.
5. A concentrated effort should be made to increase the awareness among school teachers regarding their role in identifying and handling of slow learners.
6. There are only few studies done in this topic, so more studies can be done in future.





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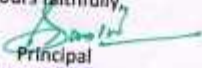
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## APPENDIX A


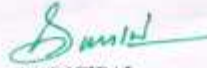
### Letter Seeking Permission to Conduct Research

	
<b>SREE MOOKAMBIKA COLLEGE OF NURSING</b>	
PADANILAM WELFARE TRUST, V.P.M. HOSPITAL COMPLEX, PADANILAM, KULASEKHARAM, K.K.DIST., TAMIL NADU, PIN : 629 161. Phone : 04651 - 280745, 280742, 278250 (Approved by Govt. of The Tamil Nadu & Recognised by Indian Nursing Council, New Delhi)	
<hr/>	
From	Date : 01.09.2014 Lr. No :
The Principal, Sree Mookambika College of Nursing, Kulasekharam.	
To	
The Head master, St. Ursula's School, Convent Junction, Kulasekharam.	
Respected Sir,	
Sub : Letter for seeking permission to conduct data collection reg:-	
This is to introduce <u>Jeba Shylica J.</u> II <sup>nd</sup> year M.Sc (N) student of Sree Mookambika College of Nursing. She has to conduct data collection in research study as a partial fulfillment of the course which is to be submitted to the TN Dr. MGR Medical University, Chennai. "A Study to evaluate the effectiveness of multisensory learning approach on academic performance of slow learners among school age children in a selected school at kulasekharam".	
The student is in need of your esteemed help and co-operation as she is interested in conducting the study in your institution. In this regard I request you to extent possible guidance and support for successful completion of data collection.	
Thanking You	
Yours faithfully,  Principal PRINCIPAL Sree Mookambika College of Nursing Kulasekharam-629 161	




## APPENDIX B

### Letter Seeking Expert Opinion for Tool Validity

	<b>SREE MOOKAMBIKA COLLEGE OF NURSING</b> PADANILAM WELFARE TRUST, V.P.M.HOSPITAL COMPLEX, PADANILAM, KULASEKHARAM, K.K.DIST., TAMIL NADU, PIN : 629 161. Phone : 04651 - 280745, 280742, 278250 (Approved by Govt. of The Tamil Nadu & Recognised by Indian Nursing Council, New Delhi)
Date : Lr. No :	
<b>LETTER SEEKING EXPERT OPINION FOR TOOL VALIDITY</b>	
Date :	
To	
Madam / Sir	
Sub : M.Sc Nursing Programme – dissertation – Validation of study tool request –reg:	
<p>Ms/Mrs. JEBA SHYLIKA J a bonafide II Year M.Sc Nursing student of Sree Mookambika College of Nursing is approaching you to obtain validation of study tool pertaining to her dissertation in practical fulfillment of the requirement for the degree of Master of Science in Nursing. The selected topics is <b>A study to evaluate the effectiveness of multisensory learning approach on academic performance among slow learners in selected school at kulasekharam</b>. In this regard I request you to kindly extend possible technical guidance and support for successful completion of dissertation.</p> <p>I enclosed here with a check list for your evaluation.</p>	
Thanking You	
Yours Sincerely	
 <b>PRINCIPAL</b> Sree Mookambika College of Nursing Kulasekharam-629 161	

## APPENDIX C

### Certificate showing conduction of study

<b>புனித ஊர்கலாஸ் ஆரம்பப்பள்ளி</b> குலசேகரம், குமரிமாவட்டம் - 629161	
ந. க. என்.	நாள் 30/9/14
<b>CERTIFICATE</b>	
<p>This is to certify that Ms. Jeba Shylika II year Msc Nursing student of Sree Mookambika College of Nursing has done her data collection regarding the <b>Effectiveness of multisensory learning approach on academic performance of slow learners among school age children</b> in St.Ursulas primary school kulasekharam during the month of September 2014.</p>	
	<p><i>M. Mary Dela Rose</i> Signature of Principal HEADMISTRESS ST.URSULAS P.S KULASEKHARAM.</p>

## **APPENDIX D**

### **List of Experts for Tool Validation**

- 1. Dr. Nedunchezian, MD, DCH,**  
Professor of Pediatrics Department,  
SreeMookambika Institute of Medical Sciences.  
Kulasekharam, Kanyakumari Dist.
- 2. Mrs.Sarayu Priya MSc(N)**  
Principal,  
P.S College of Nursing,  
Marthandam.
- 3. Mrs.ViolinSheeba. MSc(N)**  
Principal,  
Thasiah College of Nursing,  
Marthandam.
- 4. Mrs.C.V.Kavitha. MSc(N),**  
Principal,  
Saraswathy College of Nursing,  
Parassala.
- 5. Mrs.Prema Latha, MSc(N),**  
Assoiate Professor  
Christian College of Nursing  
Neyyoor.

**APPENDIX E**  
**DESCRIPTION OF TOOL**  
**SECTION – A**  
**DEMOGRAPHIC VARIABLES**

**1] Age**

- a] 8 years
- b] 9 years
- c] 10 Years

**2] Sex**

- a] Male
- b] Female

**3] Order of birth**

- a] First
- b] Second
- c] Third and above

**4] Standard of studying**

- a] Fourth standard
- b] Fifth standard

**5] Education of Parents**

**Father;**

- a] Uneducated
- b] Primary
- c] Higher secondary
- d] Degree Holder

**Mother;**

- a] Uneducated
- b] Primary
- c] Higher secondary
- d] Degree Holder

**6] Occupation of Parents**

**Father;**

- a] Daily wages
- b] Private employee
- c] Government employee
- d] unemployed

**Mother;**

- a] Daily wages
- b] Private employee
- c] Government employee
- d] House wife

**7] Type of Family**

- a] Nuclear family
- b] Joint family

**8] Living area of child**

- a] Home
- b] Hostel

**9] Special Tuition**

- a] Yes
- b] No

**10] Mode of study in home**

- a] Self study
- b] Parental guidance

**SECTION – B**

**MODIFIED ZIMMERMAN’S ACADEMIC**

**ACHIEVEMENT SCALE**

	<b>Never</b> <b>1</b>	<b>Rarely</b> <b>2</b>	<b>Occasionally</b> <b>3</b>	<b>Pretty Well</b> <b>4</b>	<b>Very Well</b> <b>5</b>
<b>ACADEMIC</b>					
<b>1.</b> Follows directions					
<b>2.</b> Stays on the task					
<b>3.</b> Works neatly and carefully					
<b>4.</b> Participates in discussion and activities					
<b>5.</b> Completes homework by deadlines					
<b>6.</b> Learns materials quickly					
<b>7.</b> Neatness of hand writing					
<b>8.</b> Quality of reading					

<b>9. Concentrate on school subjects</b>					
<b>10. Motivate self to do school work</b>					
<b>11. Examination scores</b>					
<b>12. Attendance</b>					
<b>OTHERS</b>					
<b>13. Cooperates with others</b>					
<b>14. Shows respect</b>					
<b>15. Accept responsibility</b>					
<b>16. Awareness of work</b>					
<b>17. Punctual</b>					
<b>18. Self appraisal</b>					
<b>19. Decision making</b>					
<b>20. Goal setting</b>					

61 – 80	- Pretty Well
51 – 60	- Occasionally
41 – 50	- Rarely
Below 40	- Never



**APPENDIX F**  
**DEMOGRAPHIC VARIABLES**


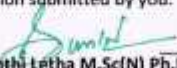
<b>Item No:</b>	<b>Relevant</b>	<b>Needs/Modification</b>	<b>Not Relevant</b>	<b>Remarks</b>
1				
2				
3				
4				
5				
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7				
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10				

### MODIFIED ZIMMERMAN'S ACADEMIC ACHIEVEMENT SCALE

Item No:	Relevant	Needs Modification	Not Relevant	Remarks
1				
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## APPENDIX G

### ETHICAL CLEARANCE CERTIFICATE

		
<b>SREE MOOKAMBIKA COLLEGE OF NURSING</b>		
PADANILAM WELFARE TRUST, V.P.M.HOSPITAL COMPLEX, PADANILAM, KULASEKHARAM, K.K.DIST., TAMIL NADU, PIN : 629 161. Phone : 04651 - 280745, 280742, 278250 (Approved by Govt. of The Tamil Nadu & Recognised by Indian Nursing Council, New Delhi)		
		Date :
		Lr. No :
<b><u>ETHICAL COMMITTEE CLEARANCE</u></b>		
To	Date: 11.01.14	
Ms . Jeba Shylka		
II yr M.Sc nursing		
Sree Mookambika Medical College of Nursing		
Kulasekharam.		
Ref:Research Topic: A study to evaluate the effectiveness of multisensory learning approach on academic performance of slow learners among school age children in a selected school at kulasekharam		
Sub: Approval of the above reference study and its related documents		
Dear Jeba shylika		
Ethics committee of Sree Mookambika College of Nursing Kulasekharam reviewed and discussed the study proposal documents submitted by related to the conduct of the above referenced study and its meeting held on		
The following ethical committee members are present at the meeting held on		
<b>NAME</b>	<b>PROFESSION</b>	<b>POSITION IN THE COMMITTEE</b>
Prof. Mrs. Shanthi Letha	Nursing	Chairman
Dr. Kani Raj Peter	Medical	Basic Medical Scientist
Dr. T.C. Suguna	Nursing	Clinicians
Adv. Mohanan	Legal	Legal Expert
Prof. Mrs. Ajitha Rethinam	Nursing	Member Secretary
Dr. A. Selva Raj	Management	Philosopher
Mr. Natarajan	Social	Medical Social Worker
Mrs. Latha	Lay person	Community Person
After due ethical and scientific consideration, the Ethics committee has approved the above presentation submitted by you.		
Regards 		
Mrs. Shanthi Letha M.Sc(N) Ph.D(N) Ethics committee chairperson Sree Mookambika College of Nursing VPM complex Padanilam Kulasekaram		Date: 11.01.14 Place: Kulasekharam

**APPENDIX H**  
**ETHICAL CLEARANCE CERTIFICATE**